

## ABSTRACT OF THE DISCLOSURE

A flexible wireless MEMS microphone includes a substrate of a flexible polymeric material, a flexible MEMS transducer structure formed on the substrate by PECVD, an antenna printed on the substrate for communicating with an outside source, a wire and interface circuit embedded in the substrate to electrically connect the flexible MEMS transducer and the antenna, a flexible battery layer electrically connected to the substrate for supplying power to the MEMS transducer, and a flexible bluetooth module layer electrically connected to the battery layer. The flexible MEMS transducer includes a flexible substrate, a membrane layer deposited on the substrate, a lower electrode layer formed on the membrane layer, an active layer formed by depositing a piezopolymer on the lower electrode layer, an upper electrode layer formed on the active layer, and a first and a second connecting pad electrically connected to the lower and upper electrode layers, respectively.